

REMARKS

Applicant thanks the Examiner for the thorough consideration given the present application.

Claims 1-18 are pending in this application. Claims 1 and 10 are canceled. Claims 2-8 and 11-17 are amended. Claims 6, 7, 15, and 16 are independent.

Reconsideration of this application, as amended, is respectfully requested.

Claim for Priority

The Office Action states that Applicants have not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. §120 for the present continuation-in-part application, because the parent application does not provide sufficient support under 35 U.S.C. §112, first paragraph, for claims 7, 8, 16, and 17 of the present application.

In addition, the Office Action acknowledges Applicants' claim for foreign priority under 35 U.S.C. §119, but contends that a claim for priority under 35 U.S.C. §119 cannot be based on the identified applications because they were filed November 14, 1996, and December 28, 1996, more than 12 months prior to the CIP's filing date.

Applicants respectfully disagree. The present application is a **continuation-in-part** of parent Application Serial No. 08/970,455, filed November 14, 1997. MPEP 201.11 states the following:

Any claim in a continuation-in-part application which is directed *solely* to subject matter adequately disclosed under 35 U.S.C. 112 in the parent nonprovisional application is entitled to the benefit of the filing date of the parent nonprovisional application. However, if a claim in a continuation-in-part application recites a feature which was not disclosed or adequately supported by a proper disclosure under 35 U.S.C. 112 in the parent nonprovisional application, but which was first introduced or adequately supported in the continuation-in-part application, such a claim is entitled only to the filing date of the continuation-in-part application.

The present CIP was filed to more clearly distinguish the present invention over the applied prior art, and not to rectify any issues under 35 U.S.C. §112, because there was no 35 U.S.C. §112 rejection in the parent application at the time the present CIP was filed.

Further, the Examiner asserts that claims 7, 8, 16, and 17 are supported only in the present CIP application. Therefore, the remaining claims, according to the Examiner, are adequately supported in the parent application and are entitled to the November 14, 1997, filing date of the parent application, as well as the priority dates of the foreign applications. Accordingly, the Examiner should acknowledge Applicants' domestic and foreign priority claims and evaluate the present claims relative to the prior art on a claim-by-claim basis as to whether a claim is entitled to the priority date of the parent application.

Oath/Declaration

Attached is a substitute Declaration executed by the inventors which correctly sets forth the inventors' residence information.

Objection to Drawings

The drawings are objected to on the grounds that FIGS. 1 and 2 are not designated by a legend such as "prior art."

Included with the accompanying Letter to the Official Draftsperson are proposed changes to FIGS. 1 and 2 to identify these drawings as "BACKGROUND ART." Also included are proposed changes to FIG. 9 to correct a typographical error and to add "Y(k)" and to FIG. 10 to add reference numerals I-VI and characters A and B to be consistent with the description in the specification. Approval of the proposed changes and withdrawal of the objection to the drawings are respectfully requested.

Objections to Specification and Claims

The specification and claims 1 and 10 are objected to because of minor informalities. Reconsideration and withdrawal of the objections to the disclosure and claims 1 and 10 are respectfully requested in view of the amendments herein to eliminate the informalities in the specification identified by the Examiner.

Rejections under 35 U.S.C. §112, first paragraph

Claims 1-18 are rejected under 35 U.S.C. §112, first paragraph, for lack of enablement. These rejections are respectfully traversed.

It is respectfully submitted that in view of the amendments herein to the specification and claims, the claims of the present application are fully enabled. Accordingly, reconsideration and withdrawal of the rejection under 35 U.S.C. §112, first paragraph, are respectfully requested.

Rejections under 35 U.S.C. §103(a)

Claims 1, 2, 5, 6, 10, 11, 14 and 15 are rejected under 35 U.S.C. §103(a) as being unpatentable over Applicants' disclosed related art (APA) in view of U.S. Patent No. 5,434,925 to Nadim. Claims 3 and 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over the APA in view of Nadim and further in view of U.S. Patent No. 4,630,305 to Borth et al. Claims 4 and 13 are rejected as being unpatentable over the APA in view of Nadim and further in view of U.S. Patent No. 5,583,968 to Trompf. Claims 8, 9, 17 and 18 are rejected as being unpatentable over the APA in view of Nadim and further in view of U.S. Patent No. 5,499,301 to Sudo et al. These rejections are respectfully traversed.

Claims 7 and 16 are not rejected over the prior art. Claims 6, 7, 15, and 16 are rewritten in independent form to include all of the limitations of the

base and any intervening claims. Claims 2-8 are amended to depend from claim 6, and claims 11-14 and 17 are amended to depend from claim 15.

As admitted on page 9 of the Office Action, the APA does not teach generating a noise control signal and an error variation signal in order to minimize the residual noise signal. The Office Action relies on Nadim for a teaching of generating an error signal by mixing a noise signal with a noise control signal.

In contrast to Applicant's claimed invention, Nadim merely discloses an active noise reduction apparatus in which noise from an engine 1 is canceled by cancellation noise from a loudspeaker 2 driven by a controller 3, as shown in FIG. 1. The difference between the noise from the engine 1 and the cancellation noise is detected as an error signal by microphone 4 and the error signal is applied to a feedback loop so that the error signal can be minimized. The error signal is a function of an output signal produced by the controller 3 and a noise signal.

Nowhere does Nadim disclose a mixer that generates an error variation signal. Nadim does not teach or suggest mixing a noise signal and a noise control signal to generate a residual noise signal and an error variation signal, as required by claims 6 and 15. Furthermore, it is respectfully submitted that none of the applied prior art discloses a phase perceiving part or method for transforming a noise signal, full-wave rectifying the transformed noise signal,

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without?

converting the fully rectified ^{2 W/rect} signal and bandpass filtering the converted signal, as required by claims 7 and 16.

It is respectfully submitted that the cited art fails to disclose or render obvious the present invention as set forth in the amended independent claims, which are therefore allowable. Since the remaining claims depend directly or indirectly from allowable independent claims, they should also be allowable for at least the reasons set forth above, as well as for the additional limitations provided thereby. Therefore, all pending claims should be in condition for allowance.

CONCLUSION

Since the remaining patents cited by the Examiner have not been utilized to reject claims, but merely to show the state of the art, no comment need be made with respect thereto.

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. It is believed that a full and complete response has been made to the outstanding Office Action, and that the present application is in condition for allowance.

Should any issues remain, however, the Examiner is invited to telephone Sam Bhattacharya (Reg. No. 48,107) at (703) 205-8000 in an effort to expedite prosecution.

Pursuant to 37 C.F.R. §§ 1.17 and 1.136(a), Applicants respectfully petition for a one-month extension of time in which to file this reply. A check for \$110 is enclosed.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17, particularly extension of time fees.

Respectfully submitted,
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MARKED-UP COPY OF AMENDMENTS

IN THE CLAIMS:

Please **cancel claims 1 and 10** without prejudice or disclaimer.

Please **amend claims 2-8 and 11-17** as follows:

2. (Amended) The noise controller of claim [1] **6**, further comprising:

a signal amplifying part amplifying said noise signal from said sensor part;

a first low pass filter filtering said amplified noise signal from said signal amplifying part and outputting a filtered noise signal to said phase perceiving part and said micro computer part;

a second low pass filter filtering said noise control signal from said micro computer part;

an electric power amplifying part amplifying a filtered noise control signal from said second low pass filter; and

an output part outputting an amplified filtered noise control signal from said electric power amplifying part.

3. The noise controller of claim [1] **6**, wherein said micro computer includes an index table.

4. (Amended) The noise controller of claim [1] **6**, wherein said micro computer includes a neural net.

5. (Amended) The noise controller of claim [1] 6, wherein said micro computer includes a control rule controlling part (CRCP) generating said noise control signal to minimize said residual noise signal.

6. (Amended) [The] A noise controller [of claim 1, wherein] for actively controlling noise, the controller comprising:

a sensor part perceiving a noise and outputting a noise signal corresponding to said noise;

a phase perceiving part perceiving a phase of said noise signal and outputting a phase signal; and

a micro computer part generating a noise control signal based on a residual noise signal and an error variation signal, said microcomputer [includes] including a mixer mixing said noise signal and said noise control signal for generating said residual noise signal and said error variation signal.

7. (Amended) [The] A noise controller [of claim 1, wherein] for actively controlling noise, the controller comprising:

a sensor part perceiving a noise and outputting a noise signal corresponding to said noise;

a phase perceiving part perceiving a phase of said noise signal and outputting a phase signal, said phase perceiving part including a transformer transforming said noise signal, a full-wave rectifier rectifying a transformed noise signal from said transformer, a pressure-sensitive circuit converting a

fully rectified signal from said full-wave rectifier, and a bandpass filter bandpass filtering a converted signal from said pressure-sensitive circuit; and a micro computer part generating a noise control signal based on a residual noise signal and an error variation signal.

8. (Amended) The noise controller of claim [1] **6**, wherein a frequency of said noise signal is a multiple of a base frequency.

11. (Amended) The method of claim [10] **15**, further comprising:

amplifying said noise signal;

low pass filtering said amplified noise signal;

low pass filtering said noise control signal;

power amplifying said filtered noise control signal; and

outputting said power amplified filtered noise control signal.

12. (Amended) The method of claim [10] **15**, wherein said noise control signal is generated through the use of a look up table based on values said residual noise signal and said error variation signal.

13. (Amended) The method of claim [10] **15**, wherein said residual noise signal and said error variation signal are generated through the use of a neural net.

14. (Amended) The method of claim [10] **15**, wherein said noise control signal is generated to minimize said residual noise signal.

15. (Amended) [The] A method of [claim 10] actively controlling noise, the method comprising:

perceiving a noise and generating a noise signal;

perceiving a phase of said noise signal and generating a phase signal;

and

generating a noise control signal based on a residual noise signal and an error variation signal,

wherein said noise signal and [said] a noise cancellation signal are mixed for generating said residual noise signal and said error variations signal.

16. (Amended) [The] A method of [claim 10, wherein] actively controlling noise, the method comprising:

perceiving a noise and generating a noise signal;

perceiving a phase of said noise signal and generating a phase signal,

said phase perceiving step [comprises:] comprising transforming said noise signal[;], full-wave rectifying said transformed noise signal[;], converting said fully rectified signal[;], and bandpass filtering said converted signal; and

generating a noise control signal based on a residual noise signal and an error variation signal.

17. (Amended) The method of claim [10] **15**, wherein a frequency of said noise signal is a multiple of a base frequency.